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BRAUNERIA ATRORUBENS AND B. PARADOXA

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WHILE looking over a collection of plants made by Mr. George M. Merrill in the Platt National Park, Murray County, Oklahoma, I came across several specimens of a *Brauneria* which I did not at once recognize. Upon consulting the second edition of Small's Flora of the Southeastern United States they proved to be *Brauneria atrorubens* (Nutt.) Boynton & Beadle,¹ as treated in that work. The Oklahoma plants looked surprisingly like *Brauneria paradoxa*, of the Ozark glades, except for the color of the rays, which was purple or purplish-pink, while that of the Ozark plant wherever I have seen it has been a deep clear yellow. In Small's description it is stated that the rays of *Brauneria atrorubens* are either purple or yellow, and the range is given as Missouri and Arkansas. Since there is no other species in that region that would at all answer the description, it seems evident that it was the intention of the author to include *Brauneria paradoxa* under the older name and to broaden the description to cover both, although no synonymy is given.

The identity of Nuttall's plant, presumably collected on his journey to the Arkansas Territory in 1819, and which he first described as *Rudbeckia atrorubens*,² and afterwards transferred to the genus *Echinacea*,³ was later confused by the treatment in Gray's Synoptical Flora and in Chapman's Flora of the Southern United States, as pointed out by Boynton and Beadle.

¹ Biltmore Bot. Studies 1: 11-12. 1901.

² Journ. Acad. Nat. Sci. Phila. 7: 80. 1834.

³ Trans. Am. Phil. Soc. n. s. 7: 354. 1841.

My interest in working out the identity of the Oklahoma plants and their relationship to the yellow-rayed plant of the Ozarks led me to write to the Academy of Natural Sciences of Philadelphia, where Nuttall's type specimen is deposited, and through the kindness of Dr. Pennell, the curator, I was able to borrow it for examination.

In its present condition the Nuttall specimen consists of a stem about 7 dm. high, with part of the fusiform root, several leaves, and the head, of which only the involucre and disk remain, the rays being entirely gone. The stem is striate and glabrous except near the summit where it is roughened with short scabrous ciliae. The leaves are lanceolate or linear-lanceolate, 3-ribbed, glabrous, except for ciliate margins, with blades 6-8 cm. long and scarcely 1 cm. wide, and slender petioles 4-5 cm. long on the basal ones, and shorter above.

The plants collected by Mr. Merrill, numbers 327 (May 7), 443 (May 17), and 819 (July 2), 1935, match very closely the Nuttall plant, except that some of them are more robust, the tallest being 8 dm. high, and the leaves slightly larger and sometimes scabrate on the lower surface. Some of the basal leaves have blades 10-12 cm. long and petioles almost as long. The greatest width of the blades of the middle stem leaves is about 14 mm., and there is sometimes a slight development of a second pair of lateral veins on these.

Brauneria paradoxa as shown by specimens in the Gray Herbarium, and as I have observed it many times growing in the Ozark region, closely resembles Nuttall's plant and the specimens collected in Oklahoma in its vegetative characters. The two plants seem, however, to be segregated geographically and ecologically, and to differ constantly in the color of the rays and perhaps in other minor particulars. Judging by Nuttall's plant and the material from Oklahoma, the leaves of *Brauneria atrorubens* are always linear-lanceolate, 8-14 mm. wide, 3-ribbed or rarely with traces of an additional pair, while in *Brauneria paradoxa* the blades of the middle stem-leaves are sometimes as much as 3.5 cm. wide, and with somewhat shorter petioles and 5 distinct ribs. In the Oklahoma specimens referred to *Brauneria atrorubens* the rays are sometimes 4-6 cm. long and distinctly pendulous, while in *Brauneria paradoxa* they are seldom over 3-4 cm. long and are spreading or reflexed, though becoming pendulous as they wither.

Brauneria atrorubens (Nutt.) Boynton & Beadle is evidently a valid name and represents a good species, but without more material

it is difficult to say whether *Brauneria paradoxa* Norton should be regarded as a distinct species or only as a variety of the former. If the latter view is taken it will afford a good opportunity for someone to make a new combination. For the present it seems to the writer safer to maintain both species. More information is also needed to determine the range of the two plants. The label on the type specimen in the herbarium of the Philadelphia Academy of Natural Sciences bears the notation in Nuttall's handwriting: "R. atrorubens. * Ark. Same from N. Carol. Nutt." The asterisk was the author's indication that he considered it a new species. After the published description of *Rudbeckia atrorubens* the habitat or range is given as: "In the plains of Arkansas, and also Georgia, from whence I have received roots from my indefatigable friend, Dr. W. J. Wray." But no material of this species has turned up from the Southeastern States in recent years so far as I can discover, nor is it credited to that region in Small's Flora or in other recent treatments.

In the original description of *Brauneria paradoxa* the author cites a specimen collected by Lindheimer in Texas, but I have never seen it outside of the Ozark region, where it is restricted to glades, usually on magnesian limestone, and where unusual ecological conditions prevail.

This note is written in the hope of eliciting further information about both of the plants under discussion.

ARNOLD ARBORETUM.

A NEW IRIS FROM CALIFORNIA

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IN the unidentified material of *Iris* in the Gray Herbarium two sheets of the same species have been found, belonging to the section *Apogon*, subsection *Californicae*. Upon comparison with the types of several species of this group and characteristic material of the remaining members, differences are apparent, so distinct as to warrant the addition of a new species to the subsection.

IRIS **Thompsonii**, spec. nov., planta caespitosa; rhizoma gracilis, plus minusve 1 cm. diametro, vadosa crescente; folia pauca, linearia, acuta, ad 30–35 cm. longe, caule excedentia, 3–5 mm. lata, nervis prominentibus, subglaucescentia; caulis simplex, 10–25 cm. altus, 2–3 foliis angustatis, reductis, $\frac{1}{2}$ – $\frac{2}{3}$ liberis, ornatus; spathae valvae